P⊘RTAL

US Patent & Trademark Office

Search: ⊙ The ACM Digital Library   ○ The Guide

"MULTIDIMENSIONAL feature" and "query point" and interval | SEARCH

THE ACM DIGITAL LIBRARY

Feedback Report a problem Satisfaction survey

Terms used **MULTIDIMENSIONAL feature** and **query point** and **interval** and **data structure** and **vector index**

Found **5,609** of **153,034**

Sort results by: [relevance ▼]

Display results: [expanded form ▼]

📗 Save results to a Binder
❓ Search Tips
☐ Open results in a new window

Try an Advanced Search
Try this search in The ACM Guide

Results 1 - 20 of 200
Best 200 shown

Result page: **1** 2 3 4 5 6 7 8 9 10   next

Relevance scale ☐ ▭ ◨ ■ ■

1 Indexing large metric spaces for similarity search queries
Tolga Bozkaya, Meral Ozsoyoglu
September 1999 **ACM Transactions on Database Systems (TODS),** Volume 24 Issue 3

Full text available: 📄 pdf(281.78 KB)   Additional Information: full citation, abstract, references, citings, index terms, review

One of the common queries in many database applications is finding approximate matches to a given query item from a collection of data items. For example, given an image database, one may want to retrieve all images that are similar to a given query image. Distance-based index structures are proposed for applications where the distance computations between objects of the data domain are expensive (such as high-dimensional data) and the distance function is metric. In this paper we consider ...

2 Compact interval trees: a data structure for convex hulls
Leonidas Guibas, John Hershberger, Jack Snoeyink
January 1990 **Proceedings of the first annual ACM-SIAM symposium on Discrete algorithms**

Full text available: 📄 pdf(1.24 MB)   Additional Information: full citation, references, citings, index terms

3 An optimal algorithm for approximate nearest neighbor searching fixed dimensions
Sunil Arya, David M. Mount, Nathan S. Netanyahu, Ruth Silverman, Angela Y. Wu
November 1998 **Journal of the ACM (JACM),** Volume 45 Issue 6

Full text available: 📄 pdf(287.94 KB)   Additional Information: full citation, abstract, references, citings, index terms

Consider a set of S of n data points in real d-dimensional space, Rd, where distances are measured using any Minkowski metric. In nearest neighbor searching, we preprocess S into a data structure, so that given any query point q ∈ Rd, is the closest point of S to q can be reported quickly. Given any po ...

Keywords: approximation algorithms, box-decomposition trees, closet-point queries, nearest neighbor searching, post-office problem, priority search

4 Session 11B: Dynamic rectangular intersection with priorities
Haim Kaplan, Eyal Molad, Robert E. Tarjan
June 2003 **Proceedings of the thirty-fifth annual ACM symposium on Theory of computing**

Full text available: pdf(304.57 KB)   Additional Information: full citation, abstract, references, index terms

We present efficient data structures to maintain dynamic set of rectangles, each with priority assigned to it, such that we can efficiently find the rectangle of maximum priority containing a query point. Our data structures support insertions and deletions of rectangles. In one dimension, when rectangles are intervals, our most efficient data structure supports queries and insertions in O(log n) time, deletions in O(log n loglog n) time and requires linear space. When intervals are g ...

Keywords: orthogonal range searching, packet classification, rectangular intersection, rectangular point location

5 External memory algorithms and data structures: dealing with **massive data**

Jeffrey Scott Vitter

June 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 2

Full text available: pdf(828.46 KB)   Additional Information: full citation, abstract, references, citings, index terms

Data sets in large applications are often too massive to fit completely inside the computers internal memory. The resulting input/output communication (or I/O) between fast internal memory and slower external memory (such as disks) can be a major performance bottleneck. In this article we survey the state of the art in the design and analysis of external memory (or EM) algorithms and data structures, where the goal is to exploit locality in order to reduce the I/O costs. We consider a varie ...

Keywords: B-tree, I/O, batched, block, disk, dynamic, extendible hashing, external memory, hierarchical memory, multidimensional access methods, multilevel memory, online, out-of-core, secondary storage, sorting

6 Geometric range searching

Jiří Matoušek

December 1994 **ACM Computing Surveys (CSUR)**, Volume 26 Issue 4

Full text available: pdf(3.92 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

In geometric range searching, algorithmic problems of the following type are considered. Given an n-point set P in the plane, build a data structure so that, given a query triangle R, the number of points of P lying in R can be determined quickly. Similar questions can be asked for point sets in higher dimensions, with triangles replaced by simplices or by more complicated shapes. Algorithms of this type are of crucial importance in computational geometry, as they can be us ...

Keywords: computational geometry, lower bounds in arithmetic model, partition tree, range searching

7 Searching in high-dimensional spaces: Index structures for improving the performance of multimedia databases

Christian Böhm, Stefan Berchtold, Daniel A. Keim

September 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 3

Full text available: pdf(1.39 MB)   Additional Information: full citation, abstract, references, citings, index terms

During the last decade, multimedia databases have become increasingly important in many application areas such as medicine, CAD, geography, and molecular biology. An important research issue in the field of multimedia databases is the content-based retrieval of similar multimedia objects such as images, text, and videos. However, in contrast to searching data in a relational database, a content-based retrieval requires the search of similar objects as a

basic functionality of the database system ...

Keywords: Index structures, indexing high-dimensional data, multimedia databases, similarity search

8 <u>Internet packet filter management and rectangle geometry</u>
David Eppstein, S. Muthukrishnan
January 2001 **Proceedings of the twelfth annual ACM-SIAM symposium on Discrete algorithms**

Full text available: 📄 <u>pdf(645.89 KB)</u>   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

We consider rule sets for internet packet routing and filtering, where each rule consists of a range of source addresses, a range of destination addresses, a priority, and an action. A given packet should be handled by the action from the maximum priority rule that matches its source and destination. We describe new data structures for quickly finding the rule matching an incoming packet, in near-linear space, and a new algorithm for determining whether a rule set contains any conflicts, in t ...

9 <u>Multi-method dispatching: a geometric approach with applications to string matching problems</u>
Paolo Ferragina, S. Muthukrishnan, Mark de Berg
May 1999 **Proceedings of the thirty-first annual ACM symposium on Theory of computing**
Full text available: 📄 <u>pdf(884.53 KB)</u>   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

10 <u>Efficient maintenance of the union intervals on a line, with applications</u>
Siu Wing Cheng, Ravi Janardan
January 1990 **Proceedings of the first annual ACM-SIAM symposium on Discrete algorithms**
Full text available: 📄 <u>pdf(821.19 KB)</u>   Additional Information: <u>full citation</u>, <u>references</u>, <u>index terms</u>

11 <u>New techniques for exact and approximate dynamic closest-point problems</u>
Sanjiv Kapoor, Michiel Smid
June 1994 **Proceedings of the tenth annual symposium on Computational geometry**

Full text available: 📄 <u>pdf(893.40 KB)</u>   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

Let S be a set of n points in R^D. It is shown that a range tree can be used to find an L_∞ - nearest neighbor in S of any query point, in $O((\log n)D-1 \log\log n)$ time. This dat ...

12 <u>Hierarchical representations of collections of small rectangles</u>
Hanan Samet
September 1988 **ACM Computing Surveys (CSUR)**, Volume 20 Issue 4

Full text available: 📄 <u>pdf(3.68 MB)</u>   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

A tutorial survey is presented of hierarchical data structures for representing collections of small rectangles. Rectangles are often used as an approximation of shapes for which they serve as the minimum rectilinear enclosing object. They arise in applications in cartography as well as very large-scale integration (VLSI) design rule checking. The different data structures are discussed in terms of how they support the execution of queries involving proximity relations. The focus is on inte ...

13 Deferred data structuring: Query-driven preprocessing for geometric search problems

R Motwani, P Raghavan

August 1986 **Proceedings of the second annual symposium on Computational geometry**

Full text available: pdf(672.79 KB)   Additional Information: full citation, abstract, references, citings, index terms

We consider the problem of answering a series of on-line queries on a static database. The conventional approach to such problems involves a preprocessing phase which constructs a data structure with good search behavior. The data structure is then used to process a series of queries without any further reordering. Our approach involves dynamic or query-driven structuring·of the database, i.e. we process the database only when it is required for answering a query. We present optimal algorit ...

14 Session 11B: Space efficient dynamic stabbing with fast queries

Mikkel Thorup

June 2003 **Proceedings of the thirty-fifth annual ACM symposium on Theory of computing**

Full text available: pdf(254.64 KB)   Additional Information: full citation, abstract, references, index terms

In dynamic stabbing, we operate on a dynamic set of intervals. A stabbing query asks for an interval containing a given point. This basic problem encodes problems such as method look-up in object oriented programming languages and classification in IP firewalls. For such application, very fast, say constant, query time is extremely important, small space is very important, and fast updates are good but the least important. Previous solutions traded space and update time for fast queries. We show ...

Keywords: IP packet classification, dynamic stabbing, object oriented method look-up

15 Box-trees and R-trees with near-optimal query time

Pankaj K. Agarwal, Mark de Berg, Joachim Gudmundsson, Mikael Hammar, Herman J. Haverkort

June 2001 **Proceedings of the seventeenth annual symposium on Computational geometry**

Full text available: pdf(289.82 KB)   Additional Information: full citation, abstract, references, citings, index terms

A box-tree is a \ifasci so-called \emph{bounding-volume hierarchy} \else bounding-volume hierarchy \fi that uses axis-aligned boxes as bounding volumes. The query complexity of a box-tree with respect to a given type of query is the maximum number of nodes visited when answering such a query. We describe several new algorithms for constructing box-trees with small worst-case query complexity with respect to queries with axis-parallel boxes and with points. We also prove lower bounds on the ...

16 Path caching (extended abstract): a technique for optimal external searching

Sridhar Ramaswamy, Sairam Subramanian

May 1994 **Proceedings of the thirteenth ACM SIGACT-SIGMOD-SIGART symposium on Principles of database systems**

Full text available: pdf(1.16 MB)   Additional Information: full citation, abstract, references, citings, index terms

External 2-dimensional searching is a fundamental problem with many applications in relational, object-oriented, spatial, and temporal databases. For example, interval intersection can be reduced to 2-sided, 2-dimensional searching and indexing class hierarchies of objects to 3-sided, 2-dimensional searching. Path caching is a new technique that can be used to transform a number of time/space efficient data structures for internal 2-dimensional searching (such as segment tr ...

17 Kinetic connectivity of rectangles

John Hershberger, Subhash Suri

June 1999 **Proceedings of the fifteenth annual symposium on Computational geometry**

Full text available: 📄 pdf(1.16 MB)   Additional Information: full citation, references, citings, index terms

18 Optimal parallel algorithms for triangulated simple polygons

John Hershberger

July 1992   **Proceedings of the eighth annual symposium on Computational geometry**

Full text available: 📄 pdf(1.21 MB)   Additional Information: full citation, abstract, references, citings, index terms

We provide optimal parallel solutions to several shortest path and visibility problems set in triangulated simple polygons. Let P be a triangulated simple polygon with n vertices, preprocessed to support shortest path queries. We can find the shortest path tree from any point inside P in O(log n) time using O(n/log n) processors. In the same bounds, we can ...

19 Comparison of access methods for time-evolving data

Betty Salzberg, Vassilis J. Tsotras

June 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 2

Full text available: 📄 pdf(529.53 KB)   Additional Information: full citation, abstract, references, citings, index terms

This paper compares different indexing techniques proposed for supporting efficient access to temporal data. The comparison is based on a collection of important performance criteria, including the space consumed, update processing, and query time for representative queries. The comparison is based on worst-case analysis, hence no assumptions on data distribution or query frequencies are made. When a number of methods have the same asymptotic worst-case behavior, features in the methods tha ...

Keywords: I/O performance, access methods, structures, temporal databases

20 Indexing moving points (extended abstract)

Pankaj K. Agarwal, Lars Arge, Jeff Erickson

May 2000   **Proceedings of the nineteenth ACM SIGMOD-SIGACT-SIGART symposium on Principles of database systems**

Full text available: 📄 pdf(399.21 KB)   Additional Information: full citation, abstract, references, citings, index terms

We propose three indexing schemes for storing a set S of N points in the plane, each moving along a linear trajectory, so that a query of the following form can be answered quickly: Given a rectangle R and a real value tq, report all K points of S that lie inside R at time tq. We first present an indexing structure ...

Results 1 - 20 of 200   Result page: **1**   2   3   4   5   6   7   8   9   10   next

PORTAL

Subscribe (Full Service)   Register (Limited Service, Free)   Login

Search: ⦿ The ACM Digital Library   ◯ The Guide

"MULTIDIMENSIONAL feature" and "query point" and interval   `SEARCH`

THE ACM DIGITAL LIBRARY

ℹ️ Feedback Report a problem Satisfaction survey

Terms used **MULTIDIMENSIONAL feature** and **query point** and **interval** and **data structure** and **vector index**

Found **5,609** of **153,034**

Sort results by   `relevance ▼`

Display results   `expanded form ▼`

🔖 Save results to a Binder

❓ Search Tips

☐ Open results in a new window

Try an Advanced Search
Try this search in The ACM Guide

Results 21 - 40 of 200   Result page: previous   1 **2** 3 4 5 6 7 8 9 10   next
Best 200 shown

Relevance scale ☐ ▢ ▤ ▦ ■

21 The direct dominance problem
Ralf Hartmut Güting, Otto Nurmi, Thomas Ottmann
June 1985 **Proceedings of the first annual symposium on Computational geometry**

Full text available: 📄 pdf(690.63 KB)   Additional Information: full citation, abstract, index terms

Given two points a=(a1,a2,...,ad) and b=(b1,b2,...,bd) in d-dimensional space, a dominates b if a≠b and for each i=1...d holds ai≥bi. The direct dominance problem consists of computing a relation of minimal size on a given set of n points such that the transitive closure of the relation gives all the domi ...

22 Optimal cooperative search in fractional cascaded data structures
T. Tamassia, J. S. Vitter
May 1990 **Proceedings of the second annual ACM symposium on Parallel algorithms and architectures**

Full text available: 📄 pdf(1.07 MB)   Additional Information: full citation, references, citings, index terms

23 Influence sets based on reverse nearest neighbor queries
Flip Korn, S. Muthukrishnan
May 2000 **ACM SIGMOD Record , Proceedings of the 2000 ACM SIGMOD international conference on Management of data**, Volume 29 Issue 2

Full text available: 📄 pdf(267.76 KB)   Additional Information: full citation, abstract, references, citings, index terms

Inherent in the operation of many decision support and continuous referral systems is the notion of the "influence" of a data point on the database. This notion arises in examples such as finding the set of customers affected by the opening of a new store outlet location, notifying the subset of subscribers to a digital library who will find a newly added document most relevant, *etc.* Standard approaches to determining the influence set of a data point involve range searchin ...

24 Implicitly representing arrangements of lines or segments
H. Edelsbrunner, L. J. Guibas, J. Hershberger, R. Seidel, M. Sharir
January 1988 **Proceedings of the fourth annual symposium on Computational geometry**

Full text available: 📄 pdf(1.61 MB)   Additional Information: full citation, abstract, references, citings, index terms

An arrangement of n lines (or line segments) in the plane is the partition of the plane defined by these objects. Such an arrangement consists of &Ogr;(n2) regions, called faces.

In this paper we study the problem of calculating and storing arrangements implicitly, using subquadratic space and preprocessing, so that, given any query point p, we can calc ...

25 Shortest path queries in rectilinear worlds of higher dimension (extended abstract)
Mark de Berg, Marc van Kreveld, Bengt J. Nilsson
June 1991 **Proceedings of the seventh annual symposium on Computational geometry**

Full text available: pdf(889.90 KB)   Additional Information: full citation, references, citings, index terms

26 An implicit connection graph maze routing algorithm for ECO routing
Jason Cong, Jie Fang, Kei-Yong Khoo
November 1999 **Proceedings of the 1999 IEEE/ACM international conference on Computer-aided design**

Full text available: pdf(102.38 KB)   Additional Information: full citation, abstract, references, citings, index terms

ECO routing is a very important design capability in advanced IC, MCM and PCB designs when additional routings need to be made at the latter stage of the physical design. ECO is difficult in two aspects: first, there are a large number of existing interconnects which become obstacles in the region. A hierarchical approach is not applicable in this situation, and we need to search a large, congested region thoroughly. Second, advances in circuit designs require variable width and variable sp ...

27 Average case analysis of dynamic geometric optimization
David Eppstein
January 1994 **Proceedings of the fifth annual ACM-SIAM symposium on Discrete algorithms**

Full text available: pdf(1.11 MB)   Additional Information: full citation, references, citings, index terms

28 A provably efficient computational model for approximate spatiotemporal retrieval
Delis Vasilis, Makris Christos, Sioutas Spiros
November 1999 **Proceedings of the 7th ACM international symposium on Advances in geographic information systems**

Full text available: pdf(149.97 KB)   Additional Information: full citation, references, index terms

29 High-speed policy-based packet forwarding using efficient multi-dimensional range matching
T. V. Lakshman, D. Stiliadis
October 1998 **ACM SIGCOMM Computer Communication Review , Proceedings of the ACM SIGCOMM '98 conference on Applications, technologies, architectures, and protocols for computer communication,** Volume 28 Issue 4

Full text available: pdf(1.82 MB)   Additional Information: full citation, abstract, references, citings, index terms

The ability to provide differentiated services to users with widely varying requirements is becoming increasingly important, and Internet Service Providers would like to provide these differentiated services using the same shared network infrastructure. The key mechanism, that enables differentiation in a connectionless network, is the packet classification function that parses the headers of the packets, and after determining their context, classifies them based on administrative policies or re ...

30 The P-range tree: a new data structure for range searching in secondary memory
Sairam Subramanian, Sridhar Ramaswamy
January 1995 **Proceedings of the sixth annual ACM-SIAM symposium on Discrete**

algorithms
Full text available: 📄 pdf(1.22 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

31 <u>I/O-efficient dynamic planar point location (extended abstract)</u>
Lars Arge, Jan Vahrenhold
May 2000 **Proceedings of the sixteenth annual symposium on Computational geometry**
Full text available: 📄 pdf(1.11 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

32 <u>On the exact worst case query complexity of planar point location</u>
Udo Adamy, Raimund Seidel
January 1998 **Proceedings of the ninth annual ACM-SIAM symposium on Discrete algorithms**
Full text available: 📄 pdf(1.01 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

33 <u>An optimal algorithm for intersecting line segments in the plane</u>
Bernard Chazelle, Herbert Edelsbrunner
January 1992 **Journal of the ACM (JACM)**, Volume 39 Issue 1

Full text available: 📄 pdf(3.84 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>, <u>review</u>

The main contribution of this work is an $O(n \log n + k)$-time algorithm for computing all k intersections among n line segments in the plane. This time complexity is easily shown to be optimal. Within the same asymptotic cost, our algorithm can also construct the subdivision of the plane defined by the segments and compute which segment (if any) lies right above (or below) each intersection ...

34 <u>Compliant motion in a simple polygon</u>
J. Friedman, J. Hershberger, J. Snoeyink
June 1989 **Proceedings of the fifth annual symposium on Computational geometry**

Full text available: 📄 pdf(1.64 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

We consider motion planning under the compliant motion model, in which a robot directed to walk into a wall may slide along it. We examine several variants of compliant motion planning for a point robot inside a simple polygon with n sides, where the goal is a fixed vertex or edge. For the case in which the robot moves with perfect control, we build a data structure that lets us in &Ogr;(log n) time determine the range of directions in whic ...

35 <u>Kinetic connectivity for unit disks</u>
Leonidas Guibas, John Hershberger, Subhash Suri, Li Zhang
May 2000 **Proceedings of the sixteenth annual symposium on Computational geometry**
Full text available: 📄 pdf(999.59 KB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

36 <u>Ray shooting and parametric search</u>
Pankaj K. Agarwal, Jiří Matoušek
July 1992 **Proceedings of the twenty-fourth annual ACM symposium on Theory of computing**
Full text available: 📄 pdf(1.07 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

37 On two-dimensional indexability and optimal range search indexing
Lars Arge, Vasilis Samoladas, Jeffrey Scott Vitter
May 1999 **Proceedings of the eighteenth ACM SIGMOD-SIGACT-SIGART symposium on Principles of database systems**
Full text available: ⬚ pdf(1.60 MB)   Additional Information: full citation, references, citings, index terms

38 Efficient searching with linear constraints
Pankaj K. Agarwal, Lars Arge, Jeff Erickson, Paolo G. Franciosa, Jeffry Scott Vitter
May 1998 **Proceedings of the seventeenth ACM SIGACT-SIGMOD-SIGART symposium on Principles of database systems**
Full text available: ⬚ pdf(1.27 MB)   Additional Information: full citation, references, citings, index terms

39 The Grid File: An Adaptable, Symmetric Multikey File Structure
J. Nievergelt, Hans Hinterberger, Kenneth C. Sevcik
March 1984 **ACM Transactions on Database Systems (TODS)**, Volume 9 Issue 1
Full text available: ⬚ pdf(2.35 MB)   Additional Information: full citation, abstract, references, citings, index terms

Traditional file structures that provide multikey access to records, for example, inverted files, are extensions of file structures originally designed for single-key access. They manifest various deficiencies in particular for multikey access to highly dynamic files. We study the dynamic aspects of file structures that treat all keys symmetrically, that is, file structures which avoid the distinction between primary and secondary keys. We start from a bitmap approach and treat the problem ...

40 Randomized multidimensional search trees (extended abstract): dynamic sampling
Ketan Mulmuley
June 1991 **Proceedings of the seventh annual symposium on Computational geometry**
Full text available: ⬚ pdf(1.32 MB)   Additional Information: full citation, references, citings, index terms

Results 21 - 40 of 200   Result page: previous   **1**   **2**   **3**   **4**   **5**   **6**   **7**   **8**   **9**   **10**   next